### PROJECT DESCRIPTION

THIS PROJECT INVOLVES UPGRADING THE INTERSECTION WITH LED SIGNAL HEADS.

II. INTERSECTION OPERATION

1. THE INTERSECTION IS TO OPERATE IN A NEMA 6-PHASE, SEMI-ACTUATED MODE.

NOTES

- FOR FINAL PAVEMENT MARKINGS, REFER TO THE PAVEMENT MARKING PLANS, AS APPLICABLE; OTHER THAN THOSE DETAILED ON THE PLAN. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE STATE HIGHWAY ADMINISTRATION STANDARDS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABLE EACH CABLE.
- ALL UNDERGROUND AND OVERHEAD UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC ONLY AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING MISS UTILITY PRIOR TO CONSTRUCTION SO THAT ALL UTILITIES MAY BE LOCATED IN THE FIELD. IF THE CONTRACTOR PERCEIVES THAT A CONFLICT BETWEEN THE UTILITIES AND THE TRAFFIC SIGNAL WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IMMEDIATELY SO THAT THE CONFLICT MAY BE RESOLVED.
- THE CONTRACTOR SHALL MAINTAIN THE CONTINUOUS OPERATION OF ALL INTERCONNECT, VEHICULAR, PEDESTRIAN DETECTORS, AND LIGHTING DEVICES. IF ANY DEVICE IS DAMAGED BY THE CONTRACTOR, IT SHALL BE REPAIRED WITHIN 72 HOURS BY THE CONTRACTOR AT NO COST TO THE ADMINISTRATION AFTER NOTIFICATION BY THE ENGINEER.
- FOR THE EXISTING CONDUITS THAT ARE TO BE USED, THE CONTRACTOR SHALL REMOVE ALL INOPERABLE/UNUSED WIRES/CABLES. IF NECESSARY, THESE WIRES/CABLES SHALL BE REMOVED FROM CONDUITS NOT LABLED "USE EXISTING CONDUIT" IN ORDER TO COMPLETELY REMOVE THEM FROM THE CONDUIT SYSTEM HANDBOXES AND SIGNAL CABINET. NOTE THAT THIS WORK SHALL BE INCIDENTAL TO THE "REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT" ITEM.

#### CONTACTS

| DISTRICT (THREE)  | OFFICE OF TRAFFI                                     | C AND SAFETY                      | MONTGOMERY COUNTY   |
|---|--|-----------------------------------|---|
| MR. JEFFREY WENTZ<br>ASSISTANT DISTRICT ENGINEER - TRAFFIC                            | MR. RICHARD DAFF<br>CHIEF, TRAFFIC O<br>410-787-7630 | ·                                 | MR. KEITH LORD<br>301-279-1971                              |
| 301-513-7318  MR. KEVIN NOWAK ASSISTANT DISTRICT ENGINEER - CONSTRUCTION 301-513-7336 | MR. ROBERT SNYDE                                     | R<br>On Chief, traffic operations | MR. KAMAL HAMUD<br>TRAFFIC ENGINEER — MCTMC<br>240-777-8761 |
| MR. WAYNE MOWDY ASSISTANT DISTRICT ENGINEER - MAINTENANCE 301-513-7304                | MR. ED RODENHIZE<br>TEAM LEADER SIGN<br>410-787-7650 |                                   |   |
| MR. AUGIE REBISH<br>UTILITY ENGINEER<br>301-513-7350                                  | MR. EUGENE BAILE<br>TEAM LEADER SIGN<br>410-787-7670 | 1 1                               |   |
|   | MS. DARLENE EIDE<br>SUPPLY OFFICER I<br>410-787-7668 | 1 4                               |   |
|   |  |                                   |   |

### EQUIPMENT LIST

| A. EQUIPMENT    | TO BE FURNISHED BY STATE HIGHWAY ADMINISTRATION  |                |                |
|-----------------|--|----------------|----------------|
| CAT<br>CODE NO. | DESCRIPTION  | UNITS          | QUANTITY       |
| 973023          | FLAT SHEET ALUMINUM SIGNS CONSISTING OF: SHIELD ASSEMBLY (30"X51") SHIELD ASSEMBLY (48"X75") | SF<br>EA<br>EA | 35.6<br>1<br>1 |

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY CONTRACTOR

| CAT CODE                                       | UNITS                | QUANTITY                           | DESCRIPTION  |
|--|----------------------|------------------------------------|--|
| 585621<br>585625<br>800000<br>801106<br>813014 | LF<br>LS<br>LF<br>SF | 920<br>220<br>1<br>117<br>86<br>47 | 12 INCH WHITE PERMANENT PREFORMED THERMO. PAVEMENT MARKING 24 INCH WHITE PERMANENT PREFORMED THERMO. PAVEMENT MARKING REMOVE AND DISPOSE EXISTING MATERIAL AND EQUIPMENT WOOD SIGN SUPPORT 4 INCH X 6 INCH INSTALL GROUND MOUNTED SIGN 12 INCH LED VEHICULAR TRAFFIC SIGNAL HEAD SECTION |
| 860284   | EΑ                   | 41                                 | 12 INCH LED VEHICUEAR TRAIT TO STORAL READ SECTION   |

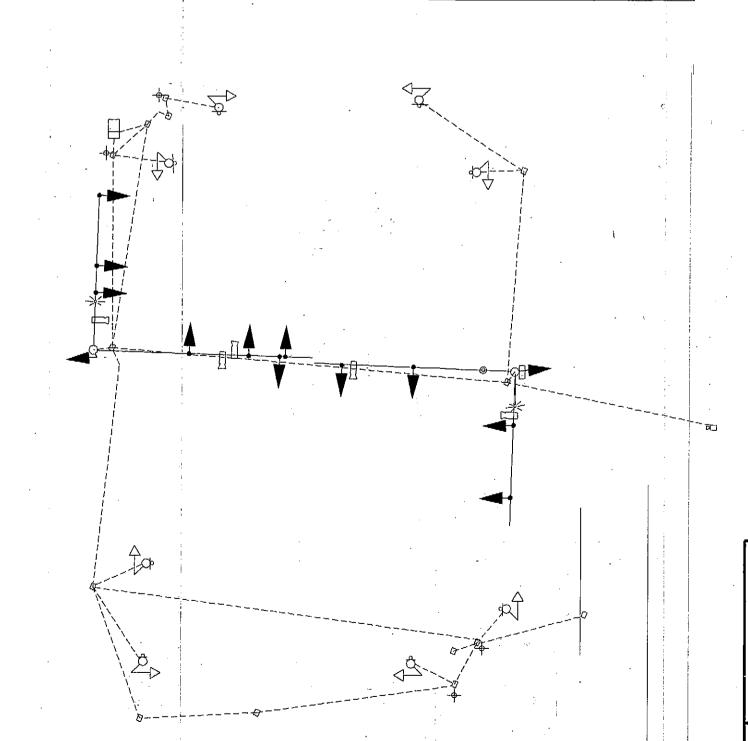
NOTE:

THE CONTRACTOR SHALL CONTACT KEITH LORD AT MONTGOMERY COUNTY SIGNAL SHOP 48 HOURS IN ADVANCE TO LOCATE ALL EXISTING SIGNAL EQUIPMENT.

# PHASE CHART

| PHASE 1 AND 5              | ← G        | <b>←</b> G | R     | R    | <b>∢</b> -G⁄R  | <b>4</b> -G∕R | R    | R               | R              | R    | R.             | R    | R    | DW    | DW    | DW    | DW    | DW   | DW       | DW    | DW    |              |
|----------------------------|------------|------------|-------|------|----------------|---------------|------|-----------------|----------------|------|----------------|------|------|-------|-------|-------|-------|--|----------|-------|-------|--------------|
| 1 AND 5 CHANGE             | P          | HASE       | 1 & 5 | MAY  | CHANGE :       | TO PHASE      | 1 &  | 6, 2            | & 5 (          | OR 2 | & 6            | ,    |      |       | •     |       |       | <u>•                                      </u> | <u> </u> |       | ,     | T            |
| PHASE 1 AND 6              | <b>←</b> G | <b>←</b> G | G     | G    | R              | R             | R    | R               | R              | R    | R              | R    | R    | DW    | DW    | DW    | DW    | DW   | DW       | DW    | DW    | <del> </del> |
| 1 AND 6 CHANGE             | <b>←</b> Y | <b>←</b> Y | G     | G    | R <sup>-</sup> | R             | R    | R               | R              | R    | R              | R    | R    | DW    | DŴ    | DW    | DW    | DW   | DW       | DW    | DW    |              |
| PHASE 2 AND 5              | <b>←</b> R | <b>←</b> R | R     | R    | -<br>G∕G       | +G⁄G          | G    | R               | R              | R    | R              | R    | R    | DW    | DW    | , DW  | DW    | DW   | DW       | DW    | DW    | 上 分,         |
| 2 AND 5 CHANGE             | <b>←</b> R | <b>←</b> R | R     | R    | <b>←</b> Y/G   | +Y⁄G          | G    | R               | R              | R    | R              | R    | R    | DW    | DW    | DW    | DW    | DW   | DW       | DW    | DW    |              |
| PHASE 2 AND 6              | + R        | <b>←</b> R | G     | G    | G              | G             | G    | R               | R              | R    | R              | R    | R    | W     | W     | W     | Ŵ     | DW   | DW       | DW    | DW    | 00           |
| PED CLEARANCE              | <b>←</b> R | <b>←</b> R | G     | G    | G              | G             | G    | R               | R              | R    | R              | R    | R    | FL/DW | FL⁄DW | FL/DW | FL/DW | DW   | DW       | DW    | DW    |              |
| 2 AND 6 CHANGE             | <b>←</b> R | <b>←</b> R | Υ     | Υ    | Υ              | Υ             | Υ    | R               | R              | Ř    | R              | R    | R    | DW    | DŴ    | DW    | DW    | DΨ   | DW       | DW    | DW    |              |
| PHASE 3                    | + R        | <b>←</b> R | R.    | R    | R              | R             | R    | G<br><b>4</b> G | G<br>+G        | G    | R              | R    | R    | DW    | DW    | DW    | DW    | DW   | DW       | DW    | DW    | 1 4          |
| 3 CHANGE                   | <b>←</b> R | <b>←</b> R | R     | R    | R              | R             | R    | Υ               | Υ              | Υ    | R              | R    | R    | DW    | DW    | DW    | . DW  | DW   | DW       | DW    | DW    | <br>         |
| PHASE 3 ALT.               | <b>←</b> R | <b>←</b> R | R     | R    | R              | R             | Ŕ    | G<br>+G         | G<br>∔G        | G    | R              | R    | R    | DW    | DW    | DW    | DW    | DW   | W        | W     | DW    |              |
| PED CLEARANCE              | ÷ R        | <b>←</b> R | R     | R    | R              | R             | R    | G<br>←G         | <u>G</u><br>+G | G    | R              | R    | R    | DW    | DW    | DW    | DW    | DW   | .FL/DW   | FL/DW | DW    |              |
| 3 ALT. CHANGE              | ← R        | <b>←</b> R | R     | R    | R              | R             | R    | Υ               | Y              | Υ    | R              | R    | R    | DW    | DW    | DW    | DW    | DW   | DW -     | DW    | DW    |              |
| PHASE 4                    | . ← R      | <b>←</b> R | R     | R    | R              | R             | R    | R               | R              | R    | <u>G</u><br>+G | GG   | G    | DW    | DW    | DW    | DW    | DW   | DW       | DW    | DW    | 1            |
| 4 CHANGE                   | - R        | <b>←</b> R | R     | R    | R              | R             | R    | R               | R              | R    | Y              | Υ    | Υ    | DW    | DW    | DW    | DW    | DW   | DW       | DW    | DW    |              |
| PHASE 4 ALT.               | <b>←</b> R | <b>←</b> R | R     | R    | R              | R             | R    | R               | R              | R    | G<br>+-G       | σļ⊈  | ,G   | DW    | DW    | DW    | DW    | W  | DW       | DW    | W     | 01           |
| PED. CLEARANCE             | <b>←</b> R | <b>←</b> R | R     | R    | R              | R             | R    | R               | R              |      | G<br>←G        | GG   | G    | DW    | DW    | DW    | DW    | FL/DW  | DW       | DW    | FL/DW | 1            |
| <sup>-</sup> 4 ALT, CHANGE | <b>←</b> R | <b>←</b> R | R     | R    | R              | Ř             | Ŕ    | R               | R              | R    | Υ              | Υ    | Y.   | DW    | DW    | D.W   | DW    | DW   | DW       | DW    | DW    | 1.04         |
| FLASHING<br>OPERATION      | FL/R       | FL/R       | FL/Y  | FL/Y | FL/Y           | FL/Y          | FL/Y | FL/R            | FL/R           | FL/R | FL/R           | FL/R | FL/R | DARK  | DARK  | DARK  | DARK  | DARK   | DARK     | DARK  | DARK  |              |

# WIRING DIAGRAM



ALL SIGNAL HEADS SHALL BE WIRED USING EXISTING SIGNAL CABLES.



STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF TRAFFIC & SAFETY TRAFFIC ENGINEERING DESIGN DIVISION



MD 97 (GEORGIA AVENUE) AND MD 185 (CONNECTICUT)

MONTGOMERY, MARYLAND GENERAL INFORMATION PLAN

SCALE NOT TO SCALE DATE JANUARY 2009 CONTRACT NO. MO 5755177 DESIGNED BY J. PALADUGU COUNTY MONTGOMERY DRAWN BY J. PALADUGU CHECKED BY K. RINIKER T.I.<u>M.S. NO.</u> F.A.P. NO. \_\_\_\_\_ TOD NO. \_\_\_\_

ABRA, WANG & ASSOCIATES, INC 1504 JOH AVENUE SUITE 160 BALTIMORE, MD 21227 (410) 737-6564 WWW.SABRA-WANG.COM

TS NO. 311. DRAWING **pSG** OF N001 SHEET NO. 34B OF 56F

PLOTTED: THURSDAY, JANUARY 15, 2009 AT 02:08 PM FILE: R:\2006\58 BCS 2005-180 PREL ENG DES SVC WRA \$200K\TASK 2\DWG\SIGNALS\SIGNAL REBUILD\PGI-N001\_MD97.DGN